Computer Final Revision

2nd.Secondary - 1st.Term

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Unit One: Basics of web site Design
Lesson 1: Cybernetic Entrance of the Project

1- Freeware Programs

They are the programs whose owner allows others to use them free of charge or with written permission from him.

2- Open Source Programs

They are the programs and published applications that give users access to the code, the possibility to modify, develop it in the light of the needs of its developers, and republish or use it after the amendment.

3- Static Web Page

It is an Information page that is displayed through one of the Internet browsers. It can be saved along .htm, .html page.

4- Dynamic Web Page

It is an information page available on the Internet. It can be written in PHP or ASP.net. It can display different types of data, and be made available through an address to the content of the page, such as restoring a value or displaying a message or an output.

5- Server:

The term is intended to two different meanings:

1. Hardware Server: which is the highest powerful computer network. (It's the computer Hardware Server in a computer network. It controls the rest of the network devices and through which the permissions of computer network users are determined by running the Server system).
2. Software server: which is as a task or role run in the network. It is intended for the role of the computer in the computer network through Software, for example:

- Web Server: means the device on which the computer Web site pages are stored.
- Print Server: means computer printer connected to it, and controls the print management operations issued by any other device in the network.
- E-mail server: is intended to store the computer device e-mail messages and controls the management of all e-mail processes and made them available for users of e-mail.

6- Script:

It is a sequence of instructions or code written in one of Web pages languages customized for web pages to perform a task or to process some of the data.

- Server Side Languages (PHP or ASP. net) Run at server.
- Client Side Languages(Java Script or VB Script) Run at Client.

For example:

✓Make sure not to leave empty-user name field. It can be implemented through: (Run at Client) (Java Script code)

✓The verification code that the user name and password are correct and in the database server is implemented through: (Run at server). (Asp or PHP code)

7- HTML" Hyper Text Markup Language: "

It's the language used to create the Static Web Page. This page can be saved along .htm, and displayed through one of the Internet browsers.

8- The language of PHP "Personal Home Page"

It's one of the specialized languages in developing dynamic web sites. It's a free open source language characterized by ease, speed, and operates the Server Side Language. Its own code can be included within the HTML code, and can easily connect different data bases safely.

- Any programming language needs an assistant program used to type the code. Among the most famous programs creating web pages in PHP language:

9- Apache Server:

This program is used with Server devices or simulates your personal computer to act as Server device.

10- Publishing Web Site: There are two ways to publish a site:

1. Localhost: Where the site is displayed on our computer or in a LAN .
2. Publishing Web Site:

Where the web site is uploaded to the server. This server is called" web server which provides web hosting service" That allows" users to visit the site through the web site address or URL "Uniform Resource Locator", for example " the site of the Ministry of Education." "www.emoe.org.eg."

11- SQL "Structured Query Language: "

It's a programming language used in all operations of database.

(orders) that allow you to carry out operations:

- Inserting new data (INSERT).
- Displaying previously stored data by (SELECT)
- Editing these data (UPDATE).
- Deleting these data (DELETE).

12- MySQL Server: It's one of the applications of RDBMS "Relational Data Base Management System."

13- " Web Server Packages":

1- Web applications package LAMP (Linux - Apache - MySQL – PHP).

2- Web applications package WAMP (Windows - Apache - MySQL – PHP).

3- Web applications package MAMP(Mac-Apache- MySQL-PHP).

4- Web applications package (XAMPP) "X-os, Apache, MySQL, PHP, Perl".

- ✓ The essential difference between the previous web applications packages is the operating system you are working with.

14- Session:

It's a way to store information about the user (visitor of the website) in order to make it available for use across the pages of the site, such as: (User Name, Password, some general and personal data, ...etc).

Lesson 2 : Planning the Project Site

Steps to create web site:

1. Configure the appropriate environment to create web site by the following:
   - Set up programs (apache and xampp).
   - Save web page files in server and display in one of internet browsers.
   - Prepare personal computer to be server.
2. Implementation of project (terms dictionary) by 3 steps
   - Create of database (my SQL and access).
   - Create static web page using html code and expression web.
   - Convert static web page to dynamic web page by using php inside html code.
   - And finally we display web sites by using internet browsers such as: Internet explorer – Firefox – google chrome.

Notes:We save information of web pages in server by one of the following :

- Web sites with cost by booking web site in one of host servers.
- Without cost by one of free internet sites which allow hosting web site.
- Publishing web site locally.

Unit 2 : Lesson 1: Requirements and production stages of the project

- Producing the "Computer Terminology Dictionary" project passes through a number of stages as follows:
  - Stage 1: Designing Web Pages.
  - Stage 2: Creating Database Tables.
  - Stage 3: Creating Web Site Pages.

(Stage 1): Designing Web Pages

- To avoid writing code in all the site pages are as follows:

1. Separate the image Banner and Hyperlinks in a separate page that is called in the beginning of each page.
2. Separate connects code to the database in a separate page that is called at the beginning of each page.
3. Image that appears at the beginning of each page called Banner
4. All Hyperlinks that we use to navigate between pages of the site are: (Main - Add term - Search term –Edit - Delete - Help).

(Stage 2): Creating Database Tables

1- **Database:**

The database is a store or save a set of structured data associated with a particular subject in order to restore it to make decisions.

2- **Tables:**

Table represents infrastructure or the main component of the database, and consists of Records and Fields.

3- **Records:**

A row of data table containing all the data for only one person or one case.

4- **Fields:**

Field is the infrastructure that makes up the data table, any column in a table is a field, and the field contains only one statement for each record of the table records.

Each field has many of properties including:

- **Field Name:** Such as Student's name, Governorate, Salary, Quantity…etc
- **Field Data Type:** may be: String: Such as Name or Address.. Numeric: Such as Degree or Salary.. Date: Such as Date of birth ...and so on.
- **Field Size :** It is the number of digits or characters in the case of the text field, or select the type of numbers entered in the case of the numeric field (Integer - contains a Decimal - ..... etc) .

✓ You can create database that consists of only one table containing all the necessary fields and in this case the table is called "Flat Table".

✓ The matter requires creating relations between the database tables to each other, so as to avoid duplication of data or fields, and in this case the database is called Relational Database.

✓ To ensure the success of the linking process between database tables, you must achieve the following:

(1) Set a "Primary Key":

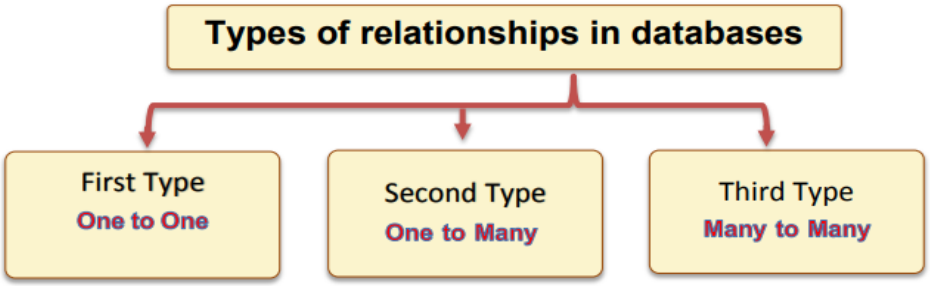
- Set a "Primary Key" field for each table, and that by one of two ways:

1. Select a field from the table fields: the requirement will not be repeated any statement in this field at all, even with the huge volume of data.

   Or

2. Add a new field: it is set or allocated as a Primary key field.

(2) Determine the types of relationships in databases:



Types of relationships between database tables

First Type: One to One

A Relationship between two tables, where you can join a record in the first table with only one record of the second table, and vice versa.

Note

The primary key fields in the two tables must be:

(1) The same Data Type.
(2) The same size.
(3) Do not require to be the primary key fields in the two tables have the same name.

"Foreign Key", because it is not of the nature of the table and it is considered an outsider field.

Second Type: One to Many

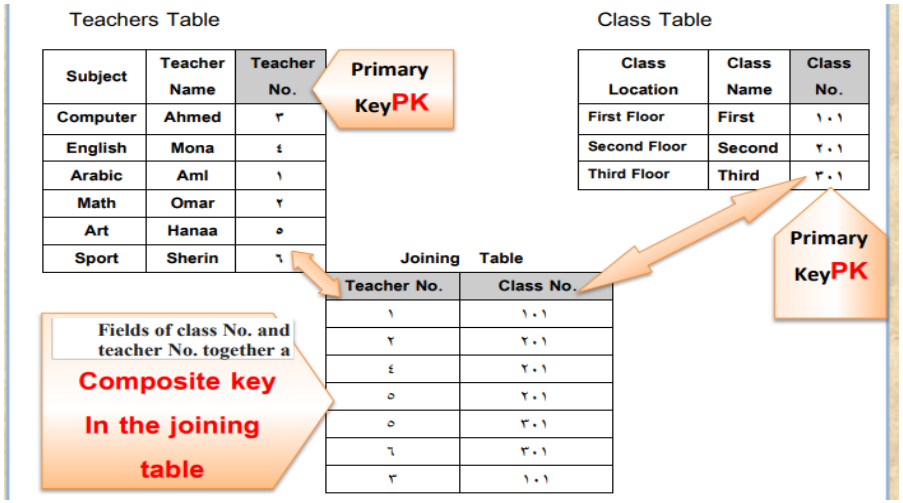
A Relationship between two tables so that you can join a record in the first table with numerous records in the second table and not vice versa.

Note

- To do link between the two tables in the one -many relationship should be added the primary key field in the table One(" classes table") to table Many ("students table"), it is called in this case "a foreign field" (Foreign Key) because it is not of the nature of the table, but it outsider field.
- In the foreign key field (the class number in students table), data can be repeated, and called Controlled redundancy.

Third Type: Many to Many

A Relationship between two tables where one or more rows in a table are associated with one or more rows in another table.



- Before doing the link between the two tables in a relationship many - to-many should create a new table that contains the primary key field "Class number" of the "Class table", and the primary key field "Teacher number" of the "Teachers table", and assign that two fields together is the composite primary key in the linking table.
- Many-To-many relationship is a theoretical relationship of concepts of databases, and cannot be represented practically in database management programs such as Access - Oracle - MySQL ... etc.
- So the relation was broken into two relationships: The first: one-to-many relationship between "Class table" and "linkage table" so that the head is a "Class table", and the parties (many) in terms of connectivity "linkage table". The last: one-to-many relationship between "Teachers table" and "linkage table" so that the head is a "Teachers table", and the parties (many) in terms of connectivity "linkage table".
- Data cannot be duplicated in the primary key field in the "Class table ".
-

- Data cannot be duplicated in the primary key field in the "Teachers table".
- You cannot repeat the teacher No. and class No. together in the linkage table because they together represent a composite primary key as shown on the figure.
- Each class in the "Class table" can be taught by many of the teachers, and each teacher can also teach in more than one class.
- Using one of Database management system applications in creation of the database, such as: Oracle or MS Access or MySQL
- We will use the application MySQL where it is free application (Free Ware), an Open Source.
- Database management system include basic Objects such as:

Tables:
through which we can create database tables containing records and fields, and the possibility of entering, displaying and modifying the data.

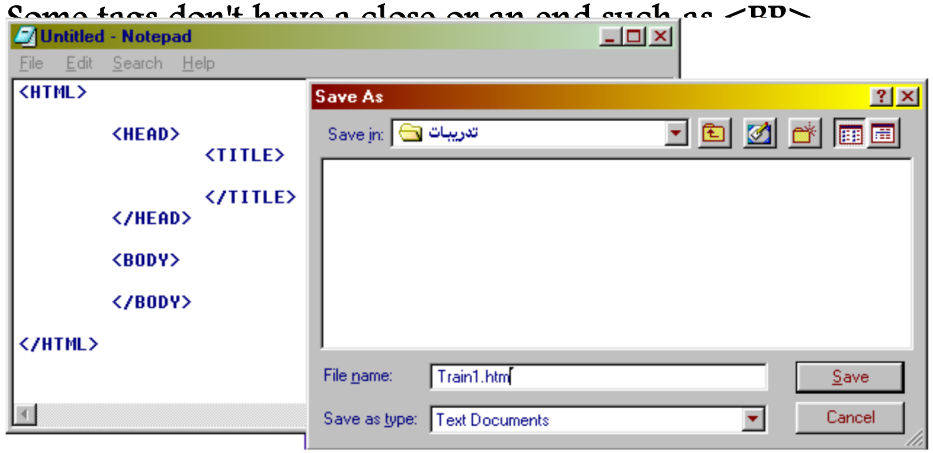
Queries:
Query is a request for information from a database for the purpose of data or information in the tables.

Unit 3: Creating Site Pages of "Illustrated Dictionary of Computer Terms".

"Hyper Text Markup Language "HTML"

- It's a coding language used to create Web pages that saved with the extension of the .htm or .html so that it can be displayed.
- you can write HTML code using a word processing programs, such as:
(MSWord, WordPad, Notepad and …….)

➢ Notes:

- The code begins with <Html> and ends with <\/ Html>
- The command written in HTML coding language is called Tag.
- Each tag has a certain task to perform.
- It is possible to be written in capital or small letters.
- Tags commands in the markup language HTMLare placed between two brands<>
- Most of the Tags have a beginning or open <... ..> and an end or Close </ >
- Some tags don't have a close or an end such as
- 

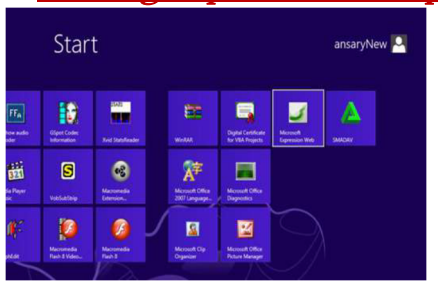
- After saving the file with the previous specifications, it takes Internet
- browser code available on your computer, such as:
Internet Explorer or Google Chrome or Mozilla Firefox Etc…

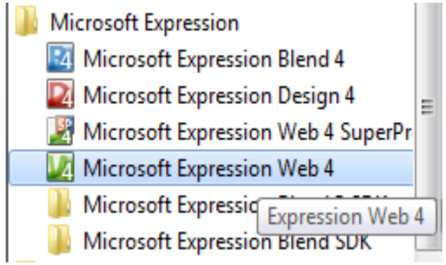
- A file icon 

in the case of Internet Explorer.

- You can also modify the Web pages and connect them through text or image using the application of Expression Web

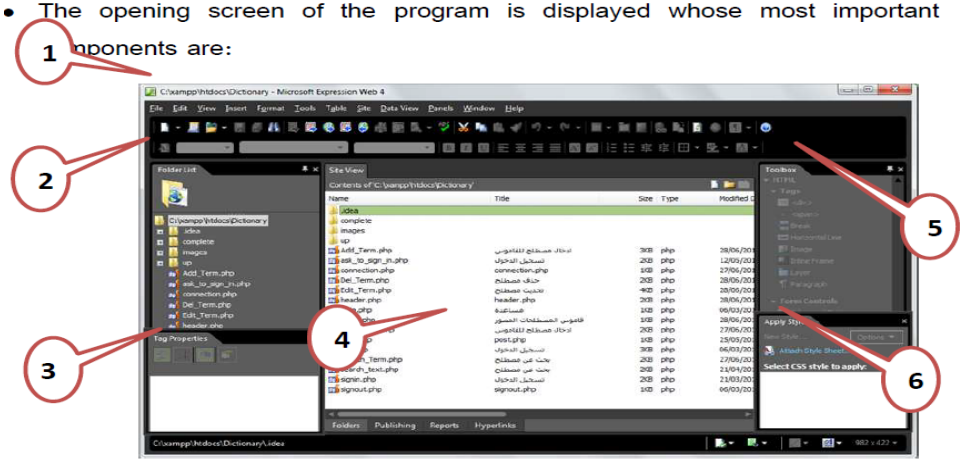
Loading Expression Web program:





From the start menu,
select the program Microsoft Expression Web 4
as shown in the following figures:

- The opening screen of the program is displayed whose most important components are:



(1) Menu Bar
(2) Folder List
(3) Tag Properties
(4) Website component
(5) Toolbox
(6) Apply Style

The applications used to create Web sites and pages feature are characterized by (WYSIWYG) (" which Means:
("what you see is what you get")

Variables and constants in the language of PHP:

A Variable is storeroom in the memory that has a name and type for which we allocate a value to be stored in and its value is changed during the course of the program. For example:

$Total = 450;

- We announce the variable when it is used
- Variable name begins with an."$"
- Variable name consists of letters, numbers and sign "_" only, such as:

$user_name - $A123 - $Password....etc.

- Variable name should express its content or what it refers to.
- Assignment sign is "=".
- Each sentence ends in PHP sign language;
- To print any information on the browser screen use Print or Echo, as follows:
- print $total;
- OR echo ("$total");
- Echo Code can be used to assemble more than a fixed or variable on printing on the browser screen and then separate them by a dot"." .

After executing of the previous code, we notice the following:

- In the first printing, we printed the variable value when placed inside the "Double quotation." quotes
- While the variable between the 'Single quotation' quotes was regarded as text printed as follows: my name is $ name.

•In the third printing phrase,we used dot to print a literal series and the value of the variable.

You can review some types of variables in the language of PHP through the following table

Type	Kind of data	Example
String	literal	"Mohammad"
Integer	Whole number	123
Double	decimals	1.23
Boolean	Rational number Or:Boolean	True / False

- It is worth mentioning that we don't not display variable kind in the language PHP, but Apache displays (recognizes) the type of compiler through the valueallocated to the variable in the customization phrase.
- For example: You may know the type of any variable using the function "get" type ($ var); That follows CODE:

```
<?php
  $U_name="mohamed";   // Variable equal to a literal value
echogettype($U_name);          // print variable type
echo "<br />";                 // move to next line
echo "Welcome to PHP";         // Print a welcome message in the PHP
    language
echo "<br />";                 // move to next  line
echogettype($test);            // print another unselected variable type
?>
```

my name is Mohamed

PHP constants in the language:

The constants are stores in memory bearing the name and type with an assigned fixed value that does not change throughout the implementation of the program, and can be defined by the following general formula:

define ('Constant Name', Value);

For example:

```
define ('name', 'Mohamed');
echo('my name is: '. name);
```

- We use a (.) In the second line of the code to link the two literal series.
- We used the constant without the $ sign.
- Define"is used to define constant.
- Each line in PHP language ends with a semicolon;.

When you execute the previous code, its result on the Internet browser screen is as follows: my name is: Mohamed

Note:

- It is worth mentioning that the variables and constants are affected by the status of large or small letters(Case-Insensitive), and if you want the constant to be not sensitive to the case of letters, use the following formula:

define('Constant Name', Value, true);

- Each sentence in the language PHP must end with a semicolon Semi Colon " ; "
- Typing a comment in PHP code without being translated or executed before the sign."//"
- As to type a note or a text of more than one line, you should type a comment or notes in full preceded by "/ *" At the end of the note put the mark."/ *"

Lesson 2 : Transactions and conditional sentences in PHP language

Operators:

(1) Mathematical Operators of two types (normal – other)

Operator	Refers to	Example	Example outcome
+	Addition	3+2	5
–	Subtraction	6–4	2
*	Multiplication	5*2	10
/	division	8/2	4
%	Residual of division	10 % 3	1

(2) There are other marhematical operators to the PPH language , for example:

Operation	Example	Means
+ =	$x +=5	$x = $x + 5
– =	$x –=5	$x = $x – 5
* =	$x *= 5	$x = $x * 5
/ =	$x /= 5	$x = $x / 5
% =	$x % = 5	$x = $x % 5
++	$x++	$x = $x + 1
- -	$x–	$x = $x – 1

(3) compared operators:

Operator	==	!=	>	>=	<	<=
Refer to	Equal	Not Equal	Greater Than	Greater Than Or Equal	Less Than	Less Than Or Equal

(4) (5)Logical Operators : They are symbolized by the following table:

Operator	المعنى
||	Or
OR	
&&	and
AND	
!	نخف

An example of the use of the outputs of the logical operators:

X	Y	X || Y	X && Y	!X
True	True	True	True	False
True	False	True	False	False
False	True	True	False	True
False	False	False	False	True

First: IF Condition:

We can use an IF statement in different ways depending on the program requirements.

→ The simplest form in which IF statement is used in PHP language is:

```
If (Logical Condition)
    {
  Code to be executed if the output of condition is true
     }
```

```
<?PHP
        $A="First";
        If ($A=="First")
           {
              Echo "You first";
           }
?>
```

In the previous example we notice that: -

You first phrase: "Echo" will be typed on the browser screen if the value of the variable equal to $ A "First.

"=" -Sign in the code ($ A = "First";) represents: Allocation operator, but the sign "==" with IF statement represents logical OPERATOR (Equal).

With Each sentence in the language PHP ends: Semicolon" ;"

The following pattern of the IF statement is the most commor

```
If (Logical Condition)
        {
          True الكود المراد تنفيذه إذا تحقق الشرط
}
Else
        {
          الكود المراد تنفيذه إذا لم يتحقق الشرط
}
```

```
<?PHP
        $A='Second';
        If ($A=='First')
            {
              Echo 'أنت الأول';
            }
        Else
            {
              Echo 'أنت الثاني';
            }
?>
```

In the previous example we notice that:

The phrase "أنت الأول " :-

Will be typed only on the Internet browser page if the only value of the variable $ A is equal to "First", otherwise it will print the words " أنت الثانى ", Because the $ A = "Second", the condition is not true, therefore, the result of the full implementation of printing the code is "" أنت الثانى "".

The following is the most complicated one for If statments (If - Else If)

```
If (Logical Condition)
        {
                الكود المراد تنفيذه إذا تحقق الشرط الأول
        }
Elseif (Logical Condition)
        {
                الكود المراد تنفيذه إذا تحقق الشرط الثاني
        }
 Else
        {
                الكود المراد تنفيذه إذا لم يتحقق الشرط الثاني
        }
```

We note that:

The first IF statement is followed by condition, if it is tue, the following code is executed directly and If not, there is a second codition, if it is executed, the code that follows Elseif is met.

In the previous example (:) Colon helped to write more than one sentence in one line It led to the same result, instead of using braces.{}

Example:

```
<?PHP
        $X=5;
If ($X<0)
          {
                Echo "الرقم سالب"
 }
Elseif ($X>0)
          {
                Echo "الرقم موجب"
          }
Else
          {
                Echo "الرقم يساوي صفر"
          }
?>
```

Because the $ X5 has achieved the second condition after Elseif and the words "positive number" will be displayedon the Internet browser Screen.

Another style of the IF statemen.

(Expression) ? If–True : If–False;

The following example illustrates the use of the previous version, called InLine If:

```
<?PHP
$x = 1;                    // The variable is equal to 1
$y = ($x = = 1) ?'One' : 'Two';
```

The value of $ variable x I sselected, if its value is equal to 1, the value of "One is stored"

In the $ y variable and saves the value "Two" variable $ y.

```
Print $y                   // the variable value
?>
```

Secondly: Switch Statement

```
<?php
$x=1;
    switch ( $x )
    {
        case 1:
            echo "واحد";
            break;
        case 2:
            echo   "اثنين"
            break;

        case 3:
            echo '   "ثلاثة"
            break;

        default:
            echo "      "
            break;
    }
?>
```

- If the value of the variable is equal to 1 ("case 1) "one" is typed and so on for the rest of the possibilities.
- the last possibility if the value of the variable were not equal to 1, 2 or 3 or less than this" no" is typed.
- We can finish without doing anything by using "Exit", for example, in another case of Default, we can put the word Exi to Switch out of the sentence instead of printing "no".

Another formula for Switch statement where “case" can take more tha

```
<?php
    $a = 2;
    Switch ( $a )
    {
        case 1:

        case 2:

        case 3:

        echo ' واحد أو اثنين أو ثلاث';
        break;

        default:
        echo 'أرقام أخرى';
    }
?>
```

Print in$a case is equal to 1 ، or 2 or 3

This image is equal to the following conditional if

```
If($a==1  ||  $a==2  || $a==3 )
{
Echo '1 or 2 or 3';
}
```

This operator means: or

Lesson 3 : "Add_Term.php" page

Differences between the values (POST) and (GET):

Get	Post
Transmitted data appear in the "URL" page address.	Transmitted data do not appear in the "URL" page address.
They are not used to send secret or any important data words.	They are used to send secret or any important data words.
It has a limit of the data used up to Its Maximum data used is up to 8 Mb 7607 Character symbols.	Its Maximum data used is up to 8 Mb

- PHP code to insert "Header" page at the beginning of the Screen is :

```
<?php
include("header.php");
 ?>
```

- Includes the database connection page by the following code:

```
include("connection.php");
```

- The tag used to open a division in PHP is
- The use of my (sql_query) function helps to show the data on a Web

Page in the Arabic; they don't appear in the form of question marks like this.??????